

Marine Air In 2010: Have Pod Will Travel

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## Have Pod Will Travel

During the Nicaraguan campaign of 1927-1933, Marine aviators, in lifting the siege of Ocotal, conducted a bombing attack in close support of ground troops, a kind of attack that became standard practice in later wars ... the Marines anticipated tactics that later became universally accepted.<sup>1</sup>

Marine aviation, as well as military aviation in general, has had a long and illustrious history steeped in tradition and innovation. During the early days in Nicaragua, hostile units wore no distinguishing uniform, and from the air one group of men looked much like another. An aviator could not always be sure that the village below him, which looked like any other collection of huts, was actually a bandit stronghold. During Operation Desert Shield/Desert Storm, hostile units were entrenched in bunkers, buildings, and camouflaged tanks, and from the air they were identified, plotted, and attacked. An aviator was not only usually sure of the village below but of the specific building within the village. Thus we see aviation emerging from an age of guessing to an age of certainty. This certainty was made possible by a technological revolution that will give new direction to the deployment and employment of Marine aviation at the turn of the century.

The electronic technology that gave the United States' aviation community large, bulky unsophisticated navigational and radar equipment is being replaced by state-of-the-art technology

<sup>1</sup>C. H. Hildreth and Bernard Nalty, 1001 Questions Answered About Aviation History, (New York: Dodd, Mead & Company, 1969).

that will prove to be a valuable asset to aviation. Modern

electronic technology will take advantage of advances in computer chips and other features that will revolutionize the capabilities of the electronic spectrum. The advent of computer chips and microprocessors will provide the aviation community with pods that will duplicate current aircraft capabilities, enable future aircraft to perform multiple roles, compliment stealth technology, and redefine warfighting concepts at all levels of war.

The effectiveness and efficiency of airpower in the recent Gulf War is still being hotly debated. Regardless of the consensus of opinion, it is safe to say that airpower played a significant role in shaping the battlefield. It, too, can be said that high technology played a vital role in the performance of US and coalition air forces.

F-18s (Hornets), EA-6Bs (Prowler), F-16s (Fighting Falcon), and the F-117A all used sophisticated advanced electronic technology to elude and deceive the enemy while surgically striking heavily defended key nodes. To accomplish this, the US employed a number of aircraft specifically designed to accomplish limited or peculiar missions. In the future, the US will be able to accomplish multiple roles not from multiple aircraft platforms but from a specialized pod that can be mounted on any aircraft that is designed to handle the capabilities of the pod.

Capabilities such as EW, targeting, and Multi-Functional Information Distribution System (MIDS) will be streamlined and placed in a pod and used in conjunction with stealth technology as aviation heads into the next century. Advances in technology

will enable Marine aviation to, again, set a standard of practice for aviation employment. Advances in packaging this technology

in pods will enable the Marine Corps to remain lean, lethal, and cost effective.

Although numerous advances in technology will be important in shaping the future of Marine aviation, the Multi-Functional Information Distribution System (MIDS) has the potential to radically change the way Marine aviation is deployed and employed. The system is a digital information network which makes possible communication, positive identification, and the exchange of tactical and relative navigation information in a secure, jam resistant environment. MIDS will provide the Marine Corps with the ability to remain a potent air arm today and will enhance its future in the following areas:

#### RESTRUCTURING AND REORGANIZATION

Aviation, cumulatively, is the most expensive element of the Marine Air-Ground Team. Future cutbacks threaten the continued existence of this team. Therefore, it is imperative that the Marine Corps look for ways to reduce cost and remain capable of conducting its roles and missions. MIDS will provide the following benefits to Marine air: increased situational awareness; net reduction of pilot workload; connectivity with other fighters; connectivity with command and control platforms; interoperability with joint and combined forces; reduced voice

communications; relative navigation, and; links adaptable to mission requirements. Although all these benefits are important from the standpoint of efficiency and effectiveness, the greatest benefit is the fact that all this comes in one single box/pod.

Therefore, the Marine Corps will be able to cut cost by going to only one or two type/model aircraft in the future. With the capabilities of MIDS harnessed in a black box or pod, the Marine Corps can eliminate the role of the EA-6B and thus realize a significant savings. The aging A-6 could also be eliminated from the inventory along with its expensive price tag. The EA-6B's Electronic Warfare (EW) package could be achieved by installing a MIDS box/pod in a F-18 or an AV-8B or strapping one to an existing weapons station. The results would be cost effective and efficient. The unquestioned heavy payload of the A-6 could be compensated for by the lethality and accuracy gained through MIDS installation in/on either a F-18 or an AV-8B.

The net result that MIDS box/pod technology offers is a reduction in type/model aircraft and the associated cost and enhanced capabilities through high tech efficiency and effectiveness. Properly designed aircraft would no longer be limited to peculiar roles as was the case with the EA-6B. A generic aircraft could perform any mission for which it had the proper wiring for a MIDS box/pod.

Fewer type/model aircraft in the Marine Corps would also simplify the maintenance and supply effort. Fewer type/model maintenance schools would be required. The supply system would be simplified by the use of one or two type/model aircraft.

Buying one or two type/model aircraft would drive down the unit cost and yield a savings. The net result will be a smaller package of people and planes that is more economical, transportable, supportable, and lethal than its predecessor. Another savings that could be realized is the extended radius that a MIDS aircraft could provide.

#### AIRCRAFT RADIUS

MIDS would increase the effective range of surveillance from 300 miles to 500 miles. A Marine aircraft with MIDS could link with an Air Force E-3A Sentry or a Navy E-2C and give even greater range coverage. This expands the battlefield for the commander and gives him precious time to make key decisions. Napoleon said that territory can be regained, but time can never be regained. By extending the range of a commander's eyes through MIDS, a commander can maximize this precious commodity.

Time and tempo are crucial elements in battle. Every commander desires more time. He, too, desires to dictate the tempo of a battle. MIDS, when coupled with commander's intent, will allow an aircraft strike commander to be able to influence the action on the spot by having a bird's eye view of the situation while data linking the current battlefield picture back to the commander. Either through mission type orders or central command and control through immediate data link, a target can be engaged and destroyed at maximum distance and with little coordination.

As new composite materials are developed and aircraft weights are reduced, the battlefield will become increasingly larger. These lightweight black boxes and pods can be ferried by transport aircraft. This will permit tactical aircraft to install additional drop tanks on the aircraft in order to extend their range. (If boxes are used vs pods, the result is the same.) This will reduce the amount of tanker service required to reach the operating area. This equates to a savings in time, support requirements, manpower, and money. In short, MIDS and other technology that can be packaged in small black boxes and/or pods will become a force multiplier.

#### FORCE MULTIPLIER

Aviation is certainly a force multiplier on the modern battlefield. However, aviation offers more than a physical force factor. It brings to the battle great lethality, physical and electronic observation, and the ability to weaken the morale of the most staunch defenders. Aviation in the future, while harnessing these features, will join forces with technology to provide even greater potential as a force multiplier.

Systems like MIDS and other technologies that are in boxes or pods will offer the future commander airborne platforms that will give him the following: greater coverage of the battlefield; near real time electronic order of battle on the enemy; the ability to project power to a threatened area prior to the landing of troops; the ability to reduce the footprint of the aviation element providing support; support from US bases through



advanced navigation, stealth technology, and aerial refueling, and; accuracy and lethality on the target. In short, aviation will offer both the commander and the taxpayers the greatest "bang for the buck" by multiplying the capabilities of an aircraft by simply installing a small black box or fitting a pod onto a weapons station. The capabilities of MIDS and other black boxes and pods will yield benefits at all levels of war.

#### STRATEGIC LEVEL

Although history is replete with numerous military surprises at the strategic level, it is unlikely, given the modern means of surveillance and communications, that any nation will achieve strategic surprise in the future. Our most recent deployment and employment in the Gulf War certainly did not achieve strategic surprise. However, it clearly demonstrated what can happen if a super power is allowed the freedom of movement to concentrate its force without impunity. If this lesson has been learned by those who are likely to pose a threat in the future, the US needs to think of ways to achieve some degree of strategic surprise.

Aviation assets not only offer the best hope of gaining some degree of strategic surprise but the only hope. (Missiles are a questionable exception.) As with the raid on Libya in 1986, aviation is the only military arm that can exact punishment on an adversary in some situations. Advanced navigation technology, EW, and stealth technology will offer the future commander the package necessary to strike at targets that require a swift and

clandestine operation. MIDS will offer the nation the capability to combine navigation technology and EW with stealth technology in a single airframe.

A swift and clandestine operation is only one reason for the need of advanced aviation capabilities. As Clark Air Force Base and Subic Bay closes in the Philippines, this may be the wave of the future for our basing rights around the world. If this is only the tip of the iceberg, we need to find ways to offset the disadvantages of not having future basing rights. We have depended on these basing rights to maintain a military presence in an area and as a point of departure to project power. With longer range aircraft and the ability to successfully attack targets from great distances, we can reduce our dependency on the need for basing rights that only hamstring us politically. There will always be the need for basing rights, but advanced aviation capabilities through systems like MIDS can reduce our political and military dependency on these rights.

Problems with airspace overflight rules can be just as constraining politically and militarily as basing rights. One never wants to purposely violate another country's airspace without permission; however, if the needs of the US require such, advanced capabilities found in MIDS and stealth technology offer us the only chance to transit and strike swiftly and deadly.

Basing rights and airspace overflight rules can either increase or decrease the chances of achieving strategic

surprise. The US can still hope to achieve some degree of strategic surprise through the use of her highly sophisticated air element even without future basing rights and airspace clearances.

#### OPERATIONAL LEVEL

Military deployment and employment of aviation elements should be concerned with two primary areas at the operational level: operational surprise, and; superior offensive actions. In a well planned and executed campaign plan, the commander wants to surprise his enemy and pounce on him unknowingly and overwhelm him with unrelenting firepower. The same aviation capabilities that will achieve strategic surprise will achieve operational surprise.

General Eisenhower achieved a great degree of operational surprise at Normandy Beach in WW II. Although the enemy knew that he was coming, they did not know exactly when, where, and with how much. By the time they answered some of these questions, it was too late to do anything about it. Aviation can achieve the same degree of effectiveness through the capabilities of MIDS and other technologies packaged in pods.

The reliability, maintainability, survivability, lethal accuracy to advanced aviation, and the versatility of airframes equipped with MIDS can reduce the number of aircraft, munitions, and personnel required to fly and maintain these machines and their support equipment. Thereby, the overall footprint of the

Marine Air Ground Task Force (MAGTF) can be reduced. However, it will pack a greater punch and require less support to sustain it.

#### TACTICAL LEVEL

MIDS will provide a wealth of information to the commander and everyone else tied into the system. On the tactical level, it would provide current location and identification of friendlies. Through data link, target data could be provided to other fighter/attack aircraft, flight path/vector information would be immediately available, and target assignments could be made by a strike commander or by a ground commander/agency several kilometers from the action.

Systems like MIDS offer the added benefit of being able to stand alone to some degree. Aircraft and system ranges, surveillance, EW/intelligence, precise location and identification of friendlies, weapon coordination, and information management capabilities will permit the force commander to delegate or decentralize command and control authority to much lower levels than presently practiced.

The accurate navigational system and situational awareness of MIDS will enable a commander to disguise his air package by using only one type/model aircraft. Unbeknownst to the enemy, one type/model aircraft would be able to conduct fighter, attack, reconnaissance, escort, EW, command and control, and Suppression of Enemy Air Defenses (SEAD). Although this is taking place at the tactical level, the sophistication of MIDS will provide the

force commander with an edge in time and tempo. The range of an airborne platform with the advantages of MIDS will also give the force commander greater flexibility in employing his organic weapons and other supporting arms.

Part of this flexibility will come from the use of targeting pods. These podded systems will enable single-seat combat aircraft to navigate and attack targets with stand-off weapons at low level at night and in poor visibility. This will open up the night window and give the force commander the capability to maintain an around the clock stranglehold on the enemy. It, too, will enable him to maximize the cover of darkness without sacrificing accuracy of firepower. Laser-guided munitions associated with Forward-Looking Infra-Red (FLIR) systems and their laser designators will provide pinpoint accuracy.

The cumulative benefits of MIDS and other related systems incorporated in pod technology can be quite effective even when the MAGTF is relatively small. If the Navy is forced to reduce its capabilities to conduct amphibious operations as a result of reduced amphibious shipping, the MAGTF needs to learn how to do more with less. (Some would say here that we've been doing that for 200 plus years.) Therefore, a prudent Marine Corps would be wise to equip and train itself to meet this challenge. Limited amphibious shipping, reduced manpower in the Navy and Marine Corps, a shrinking dollar, and a global commitment require the marshalling of superior firepower and survivability in a small package. Therefore, one or two type/model aircraft and MIDS type

technology will help the Marine Corps to cope with the demands of the future.

#### INDUSTRIAL BASE

The aviation industrial base of the US was a key factor in WW II. The might of this industrial base was able to out produce that of the Axis Powers. Although production alone was not the sole cause of allied success in the air, the Axis' inability to keep pace with US production eventually led to a great attrition of the Luftwaffe. Although the aviation industrial base would have yielded similar results in Operation Desert Shield/Storm, current aviation technologies that have taken the capabilities of an airframe and encapsulated it in a pod will pose serious questions for the US in the future.

MIDS and other technologies that are incorporated in pods have both pros and cons:

PROS	CONS
Joint/Combined fielding	Subject to proliferation
Compact	* Primarily Japanese software
Cost efficient/effective	
Operationally effective	
Reliable	
Maintainable	
Survivable	
Flexible	
Large industrial base *	

Although there are other cons, the important thing to note is that the US' dependency on this technology is in the hands of another nation. The US, as it embraces a technology that could revolutionize the way we do business, must decide whether or not

to put the strength of its air arm in the hands of another nation. We must consider at least two things. One, will this leading technology be sold to our potential enemies on the open market in the name of business? Two, will we be denied these items at a critical time because of differences in national interests?

MIDS and other technologies are being looked at by a number of other countries – friend and foe. As the cost of aircraft rises and the cost of technology in pods decreases, there is an ever increasing tendency of other nations to buy this technology. When the US was the primary industrial base for related technologies, it was able to decide, in house, what would be sold to whom and under what conditions. As the industrial base for this technology shifts to Japan and other nations, the US will have to diplomatically lobby for where foreign sales will be made.

Where this technology is sold on the open market is important, but whether or not this technology will continue to be sold to us if a conflict/war breaks out is a critical question that the US must address now. Although we are allies with Japan and other nations that currently produce the software for MIDS and other systems, we must consider the consequences of being denied such technology if the US invests heavily in these systems. The US can not be sure that these technologies will continue to be sold to her without reservation.

If the US can not assure herself of continued sustainment

through foreign sales, she must bridge the technological gap of these systems now through technology transfers or other means. The US must assure herself that either an industrial base is in place or the capability is resident within this nation on short notice. The US' capacity in war is just as important as her capability.

#### MARINE AIR

Both capacity and capability in MIDS and other related technologies will impact the future roles of Marine air. The technology incorporated in pods do not know the difference between a Marine aircraft and an Air Force aircraft. As the defense dollar shrinks, all the services will be in competition for a slice of the pie. If every type/model aircraft has the same capabilities, the argument on who is to own air will be revisited. Can Air Force air support the mission of the Marines? Can Naval Air support the mission of the Marines? MIDS can certainly enhance the ability of air to be a somewhat stand alone arm. However, it does not discriminate as to whose air is utilized.

As such, Marine air may find itself on naval aircraft carriers in the future. With MIDS, other systems, and a long standing working relationship with the Marine Corps, will the Navy assert that it is capable of providing the only air that the Marine Corps will need when deployed as an amphibious unit? Will the capabilities that MIDS offer the joint/combined arena render



Marine air as just another platform that can be easily assimilated and controlled by the Joint Force Air Component Commander (JFACC)?

The capabilities of MIDS will enable Marine air to travel greater distances from the traditional front lines. They will enable it to perform tasks far above those currently conducted by the air arm. They will enable the Marine Corps to make critical cost cutting decisions without reducing its capabilities. However, the Marine Corps must be mindful that the technology offered by MIDS is wed to aviation capabilities and not exclusively to Marine air. As in the early days in Nicaragua, the Marine Corps must take this technology and become the yardstick by which others are measured. "Have Pod, Will Travel".